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Abstract :

Tests were conducted in the NAL 1.2m trisonic wind tunnel on a 1/20th scale model of the LCA Stage 6.12 configuration. The tests were carried out in the Mach number range of 0.5 to 1.4 and over an angle of attack range varying from 5 deg. to 28 deg. at M = 0.5 to -5 deg. to 12 deg. at M = 1.4. The test Reynolds numbers (based on wing mean aerodynamic chord) varied between 4.5 x 10^6 to 7.0 x 10^6 depending on the Mach number. The results show that this configuration generates a trimmed lift-to-drag ratio of about 5.4 at a lift coefficient of 0.5 and Mach number of 0.7. Deflecting the inboard and outboard leading edge slats by 10 and 15 deg respectively increases the trimmed lift-to-drag ratio by about 5% at the same conditions. The leading edge slats also alleviate pitch-up at Mach number below 0.95.